PANTHERA OKEN, 1816 (MAMMALIA, CARNIVORA): FURTHER COMMENT ON THE PROPOSED PRESERVATION AND RENEWED APPLICATION. Z.N.(S.) 482

(see vol. 22, pages 230–232, vol. 23, pages 67–70, vol. 24, page 3)

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Concerning the Morrison-Scott's (*Bull. zool. Nomencl.* **23** : 230–232, 1965) request to the International Commission on Zoological Nomenclature " to validate the generic name *Panthera* Oken, 1816, as allowed by Opinion 417, and to designate *Felis pardus* L. 1758, as the type-species ", there were published in this journal unfavourable comments by Hershkovitz and Dias de Avila-Pires and a consent by Tortonese. In the interest of defending zoological nomenclature against confusion it seems highly necessary to discuss these comments.

The first mention of the name *Panthera* without any following specific name and therefore not clearly marked as a generic name may be found in Oken's " *Lehrbuch der Naturgeschichte*. 3 Theil, Zoologie, 2. Abth., Fleischthiere, Leipzig 1816 " on page 1052 for *Felis colocolo*. Abbreviated to *P.* one finds this name further on as *P. paragayensis* (p. 1052) and *P. mexicana* (p. 1054). Hence Hershkovitz is surely right concerning the first mention of *Felis colocolo*, the hitherto ascribed type of *Panthera* Oken, in saying this is " no generic name *Panthera* as used and understood by modern authors ". With regard to this the unabbreviated name *Panthera* with clear generic meaning followed by a specific name may be found in the " Lehrbuch " as *Panthera americana* (p. 1054) for the ocelot. Following this Oken used *Panthera* again in abbreviation among others for the leopard (p. 1057: " 6. Art. *P. varia, F. Leopardus* " for the *Panthera pardus leopardus* and *Panthera pardus panthera* (partim); p. 1058: " 7. Art. *P. vulgaris, Panthera, F. Pardus* " for the african leopard, especially the *Panthera pardus pardus* from Egypt). Therefore Hershkovitz seems to be wrong in writing " *Felis pardus*, as employed by Oken, has nothing to do with his "*Panthera*" and is not unequivocably the Linnean *Felis pardus* ". According to Article 69 of the International Code of Zoological Nomenclature there is no reason why *Felis pardus* L. should not be designated as type-species of *Panthera* Oken as requested by Morrison-Scott, for *Felis pardus* L. obviously has been included by Oken as one species among others in his genus *Panthera*. Article 1 of Hershkovitz's summary: " *Panthera* Oken, 1816 is an undigestible artifice " has to be rejected.

Hershkovitz states that " the most widely used name for great cats is *Felis* Linnaeus ". He cites as a proof for this view only three published faunal catalogues for North and South America and his own manuscript catalogue of South American mammals. Except in the monograph of Cabrera (Los Felidos vivientes de la Republica Argentina. *Revista del Mus. Argent. de Cienc. Nat.* " *Bernardino Rivadavia* " *e Inst. Nac. de Invest. de la Cienc. Nat.*, **6** (5), Buenos Aires 1961) of Argentine cats using *Leo* instead of *Felis* (!) for the great cats, there is no special paper on the classification of the Felidae in his list. Out of the great number of papers on this matter written by Pocock and using the name *Panthera* Hershkovitz cites only one of the earliest from 1916 recognizing five different genera of great cats. It seems that he has overlooked all following papers of the same author summarizing lion, tiger, leopard and jaguar under the generic name *Panthera*. Since Pocock's work on " The Classification of existing Felidae " (*Ann. Mag. Nat. Hist.* **20** (119) : 329–350, 1917) giving subfamily rank to the *Panthera*-group there are exactly 50 years now in which the name *Panthera* Oken was widely used not only in special taxonomic papers as given by Haltenorth (Die verwandtschaftliche Stellung der Grosskatzen zueinander I and II (*Z.f. Säugetierkde.* **11** : 32–105 and **12** : 97–240, 1936 and 1937), Zarapkin (Zur Frage der verwandtschaftlichen Stellung der Grosskatzen zueinander. Z.f. Säugetierkde. **14** : 220–224, 1939), Leyhausen (Beobachtungen an Löwen-Tiger-Bastarden mit einigen Bermerkungen zur Systematik der Grosskatzen. *Z.f. Tierpsych.*

7 : 46–83, 1950), or Weigel (Das Fellmuster der wildlebenden Katzenarten und der Hauskatze in vergleichender und stammesgeschichtlicher Hinsicht. *Säugetierkundl. Mitt.* 9, Sonderheft, 1961), or in the fundamental Simpson's classification of mammals (The Principles of Classification and a Classification of Mammals. *Bull. Amer. Mus. Nat. Hist.*, **83** : 1–350, 1945), but also in most of the general mammalogical and non-mammalogical literature and textbooks, as already stated by Tortonese (cited above). Therefore, article 2 of Hershkovitz's summary: " The most commonly used generic name for great cats is *Felis* Linnaeus " for want of any good foundation has to be rejected too.

Subfamily rank was given to the *Panthera*-group by Pocock primarily on the basis of a character of the hyoid apparatus as Hershkovitz correctly states. But Hershkovitz quotes no published new investigation concerning this feature in assuming that this character " now proves to be even more tenuous than has been generally supposed ". Further on he is simply wrong saying: " Other characters adduced for generic separation of great cats from small as typified by *Felis catus* Linnaeus, have not withstood critical review ".

As I have shown elsewhere in detail (Hemmer, H.: Untersuchungen zur Stammesgeschichte der Pantherkatzen (Pantherinae). Part I. *Veröffentl. d. Zool. Staatssammlung München* **11** : 1–121, 1966) the four species lion, leopard, jaguar and tiger belonging to one another differ morphologically as well as behaviourally from all other genera or species groups of cats to a very much greater extent than do these groups between themselves, except the cheetah (*Acinonyx jubatus*). Beside the character of the hyoidean apparatus Pocock (On the external characters of the Felidae. *Ann. Mag. Nat. Hist.* **19** : 109, 1917) has already described two more differences between Pantherinae and Felinae concerning the rhinarium and the claw-sheaths. Sonntag (The Comparative anatomy of the tongue of the Mammalia. VIII. Carnivora. *Proc. Zool. Soc. London*, 1923) showed a further characteristic feature in the morphology of the tongue. Leyhausen (Verhaltenstudien an Katzen, 1956, and: Uber die unterschiedliche Entwicklung einiger Verhaltensweisen bei den Feliden. *Säugetierkundl. Mitt.*, **4** : 123–125, 1956) has published some behavioural differences (voice, eating attitude, tearing action, care of the fur). The ounce (*Uncia uncia*) differs enough from the taxonomically clearly defined genus *Panthera* to be given its own generic rank but phylogenetically related to the base of it. Therefore the taxonomic connection of these two genera may only be expressed by a higher taxonomic category than the generic one. The subdivision of the Felidae into the three subfamilies Pantherinae, Felinae and Acinonychinae seems to be fully justified (see Hemmer, l.c., especially pages 17–18). For the Pantherinae there may be given the following diagnosis:

Suspensorium of the hyoid imperfectly ossified, its interior portion consisting of a larger or shorter elastic tendon. Naked area of the rhinarium not, or at most with a very narrow area, reaching to the dorsal side of the nose; rhinarium itself tolerably flat, the median area narrow without definite lateral infranarial extension. Claw sheaths well developed, both upon the outer and the inner side of the claw. Spinous patch of the tongue begins close to apex of tongue, and is restricted to the anterior part of the dorsum. In the pattern of the head and neck nowhere continuous longitudinal stripes but spots only. Pupil of the eye at normal light round or nearly round. Use of " tearing action " at eating. Care of the fur, especially concerning the face, not very thorough. Tail generally stretched out backwards in sitting or resting attitude.

These explanations may show that article 3 of Hershkovitz's summary: " There is no strong evidence that great cats typified by the leopard, *Felis pardus* Linnaeus, are generically distinct from small cats typified by *Felis catus* Linnaeus " has also to be rejected.

In his article 4, Hershkovitz speaks of a " current and spreading usage " of the name *Leo* Brehm for great cats which " promotes stability, meets with no serious objections and results in no confusion ". I can see no proof for this view of current and spreading usage of *Leo*. Placing the name *Leo* Brehm on the Official List of Generic Names in Zoology in place of *Panthera* Oken would contradict the stability

of nomenclature and result in the greatest confusion. Such an unnecessary change in the name of one of the widely known genera of animals would be beyond every reasonable regulation of nomenclature. In requesting the International Commission of Zoological Nomenclature to place the name *Panthera* Oken on the Official List of Rejected and Invalid Generic Names in Zoology and asserting that there would be no need for this name, as he has done in his article 5, Hershkovitz himself calls for such confusion.

Dias de Avila-Pires (cited above) also disagrees with Morrison-Scott. But his real problem in doing so is not a nomenclatorial one but a problem of language. His statement: " To call a panther *Leo* is no more confusing than to call a lion, *Panthera* " seems to be a very unrealistic argument for rejecting a well established name in favour of another one which would be in no way better according to his own view.

In connection with this proposed preservation of *Panthera* Oken there is another problem. I have shown (Hemmer, l.c.) that the genus *Panthera* has to be subdivided into the two subgenera *Panthera* for lion, leopard and jaguar and *Tigris* for the tiger. The first mention of *Tigris* with generic meaning likewise dates from Oken, 1816, the second from Gray, 1862. As I have no firm intention of applying for a third name of Oken's to be validated, the International Commission for Zoological Nomenclature may decide which of these two names should be valid.

In conclusion, I support and renew Morrison-Scott's application for conservation of " *Panthera* Oken, 1816 " and request a decision on the author of the subgeneric name *Tigris*. The International Commission on Zoological Nomenclature is requested to take the following action:

to use its plenary powers:

(1) to validate the generic name *Panthera* Oken, 1816, as allowed by Opinion 417, and to designate *Felis pardus* L., 1758, as the type-species;

(2) to decide on the subgeneric name *Tigris* between the authors Oken, 1816, and Gray, 1862.

REPLY TO MAYR'S COMMENT ON THE PROPOSED PRESERVATION OF *PAN* FROM OKEN, 1816. Z.N.(S.) 482

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In his comment on preservation of *Pan* Oken, 1816, Professor Mayr (*Bull. zool. Nomencl.* **24** (2) : 66) declares, " to say as Hershkovitz does, that there is no need for stability for scientific names in this area because,"—then he goes on with a direct quotation from Hershkovitz (*Bull. zool. Nomencl.* **23** (2/3) : 68), italics mine—" '*few anthropologists, primatologists, zookeepers, behaviorists, biomedical investigators and others using non-human primates in research* . . . , are zoologists ' is an argument the force of which I fail to understand."

In his statement, Mayr first attributes to me a conclusion of his own device and which is entirely alien to anything I said or implied. He then couples it with names of scientific professions I listed in a context diametrically opposed to his peculiar interpretation.

My original remarks, which Mayr obviously failed to understand, are clear and unequivocal exhortations to all who work with animals to seek stability of scientific names in harmony with the International Code of Zoological Nomenclature and Opinions of the International Commission on Zoological Nomenclature.

Pan, cited from " Oken, 1816 " (*Lehrbuch Naturgeschichte* . . . , usually without definite page reference) is invalid because the International Commission on Zoological Nomenclature rejected Oken's *Lehrbuch* for nomenclatorial purposes (Opinion 417, 1956). It has been shown that *Chimpansee* Voigt, 1831, is the oldest available name for the chimpanzee.